

1. Genus:*Cymbidium* Sw.

Bentham and Hooker

Kingdom: Plantae

Division: Phanerogamia

Class: Monocotyledonae

Series: Microspermae

Ordo: Orchideae

Tribus: Vandeae

Subtribus: Cymbidieae

Genus: *Cymbidium* Sw.

2. Systematic Position:

APG IV

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Monocots
- Order: Asparagales Link.
- Family: Orchidaceae Juss.
- Subfamily: Epidendroideae
- Tribe: Cymbidieae
- Subtribe: Cymbidiinae
- Genus: *Cymbidium* Sw.

3. Species:

Global: 82

India: 21

4. Taxonomic riddles:

5. Distribution:

Global: Andaman Is., Assam, Bangladesh, Borneo, Cambodia, China North-Central, China South-Central, China Southeast, East Himalaya, Hainan, India, Japan, Jawa, Korea, Laos, Lesser Sunda Is., Malaya, Maluku, Myanmar, Nansei-shoto, Nepal, New Guinea, New South Wales, Nicobar Is., Northern Territory, Pakistan, Philippines, Queensland, Sri Lanka, Sulawesi, Sumatera, Taiwan, Thailand, Tibet, Vietnam, West Himalaya, Western Australia

India: North east India

6. Habit and Habitat: Epiphyte or lithophyte

7. Economic Importance: Some species of *Cymbidium* are used in spices and as food.

8. DNA content range:

Methodology

2C (9.32 pg)²⁵ (Narayan et al 1989)

Feulgen Microdensitometry²⁵

2C (6.31 pg)¹² (Jones et al 1998)

Flow cytometry¹²

9. Basic chromosome number(s): $x=18^4$, 19^1 , 2, 13, 14, 15, 21, 23, 30, 39, 42, 45, 56,

20^1 , 3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 35, 37, 38, 39, 40, 47, 48, 49, 51, 54, 55, 57

$21^{23, 28, 30, 33, 34, 53}$

10. Zygotic chromosome number(s): $2n=36^4$, 38^1 , 2, 13, 14, 15, 23, 30, 42, 39^1 , 2

40^1 , 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 24, 25, 26, 27, 31, 32, 35, 37, 38, 39, 40, 41, 42, 43, 49, 51, 54, 55, 57

41^{17}

$42^{23, 28, 30, 53}$

11. Gametic chromosome number(s): $n=19^1$, 21, 23, 30, 39, 45, 56, $20^{18, 21, 22, 23, 24, 29, 30, 39, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}$

$22^{33, 34}$

13. Ploidy levelDiploid^{1, 2,3, 4, 5, 6, 7, 9, 10,11, 12, 13, 14, 15, 16, 17,18, 19,20, 21, 22, 23, 24, 30, 31, 32, 33, 34, 35, 37, 38, 39, 40, 41, 42, 43,44, 45,46, 47, 48, 49, 51, 53, 54, 55, 56, 57}

14. Nature of polyploidy (auto, segmental, allo, autoallo):

15. Aberrant chromosome number(s) (aneuploidy, aneusomaty, polysomaty):^{1, 2, 17, 39}

16. Karyograms: ^{1, 4, 23, 26, 30, 35, 37, 38, 39}

Meiosis:^{1, 23,24, 29, 30, 39, 45}

17. Banding pattern(s):

18. Physical mapping of chromosomes:

GISH:

19. Phylogenetic relationship at Chromosomal; DNA level: Von der Berg C, Philip AR, Chase M
Molecular phylogeny of Cymbidium (Orchidaceae: Maxillarieae): Sequence data from internal t
spacers ITS of nuclear ribosomal DNA and plastid matK. Lindleyana 17: 102-111

Yang JB, Tang M, Li HT, Zhang ZR 2013 Complete chloroplast genome of the genus Cymbidium
the species identification , phylogenetic implications and population genetic analysis. BMC Evol
Biology 13: 84

Sharma SK, Dkhar J, Kumaria S, Tandon P, Rao SR 2012. Assessment of phylogenetic interrel
genus Cymbidium (Orchidaceae) based on internal transcribed spacer region of rDNA. Gene 49:

Freudenstein JV, Chase MW 2015 Phylogenetic relationships in Epidendroideae (Orchidaceae)
flowering plant radiations: progressive specialization and diversification. Annals of Botany 115:

22. Any other information: